CHAPTER XXIII

FISCAL THEORY AT WORK

As in the case of monetary economics, the primary concerns of fiscal economics are how to stabilize the economy and stimulate growth. However, how to achieve these objectives differs. In monetary economics, money supply is used, while in fiscal economics, government expenditures and taxes are used. Also, like monetary economics, fiscal economics has its own theory and policy. We will first discuss fiscal theory and then fiscal policy.

ECONOMY WITHOUT A GOVERNMENT SECTOR AND WITHOUT SAVING AND INVESTMENT

To understand the fiscal theory one has to know how the economy functions. One way to do it is to understand the working of circular flow of economic activities. To simplify it, we first assume that there are only two sectors, that is, public (consumers) and business. In other words, there is no government sector. Business sector produces goods and services. In so doing, it pays wages, rent, interest and profit. These are the expenditures of business sector and income of the public (consumers). The public in turn spends their income on goods and services (consumption expenditure). (See Figure 23-1) Furthermore, we assume no saving and no investment. This means public spend all the income they receive and businesses spend all the revenue they receive. Plus, businesses make no investment in machines and equipment. In that case, there will be no disturbance in the economy, meaning there will be no ups and downs in the economy. The aggregate demand for goods and services will always be equal to the aggregate supply. Here the condition of equilibrium will be:

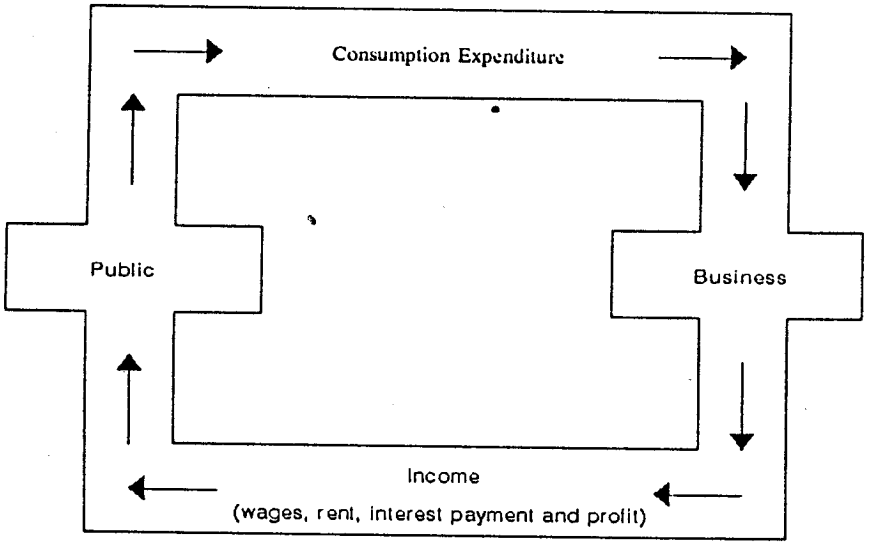
$$Y = C \qquad \ldots (23\text{-}1)$$

Here Y stands for income and C for consumption expenditure. The economy will always be in equilibrium. But the equilibrium level may or may not be at the full employment level. The economy is at full employment when all the nation's resources (land, labor, capital, etc.) are fully utilized. If the equilibrium

is below the full employment, nothing can be done about it. Because the government sector which has the power to do something about it is not there.

FIGURE 23-1

CIRCULAR FLOW OF ECONOMIC ACTIVITIES WITHOUT A GOVERNMENT SECTOR AND WITHOUT SAVING AND INVESTMENT



ECONOMY WITHOUT A GOVERNMENT SECTOR BUT WITH SAVING AND INVESTMENT

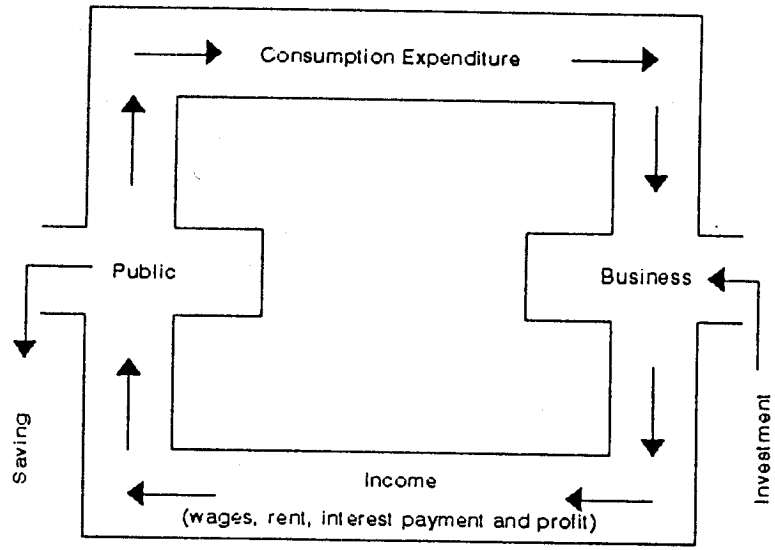
The situation described above (an economy without saving and investment) is purely imaginary. In a real economy, we have saving and investment which become a source of disturbances.

Why do saving and investment occur? Saving occurs because people do not spend all the income they earn. They save a portion of it and spend the rest. (Saving is regarded as a leakage, the amount which leaks out of the circular flow.) Businessmen, on the other hand, do not spend just what they receive. They often spend more than that. They do so because they want to expand.

Money spent on machines and equipment is called investment. (Investment is regarded a net injection into the circular flow.) (Figure 23-2 describes the circular flow of economic activities where there are saving and investment but no government sector.)

FIGURE 23-2

CIRCULAR FLOW OF ECONOMIC ACTIVITIES WITHOUT A GOVERNMENT SECTOR BUT WITH SAVING AND INVESTMENT



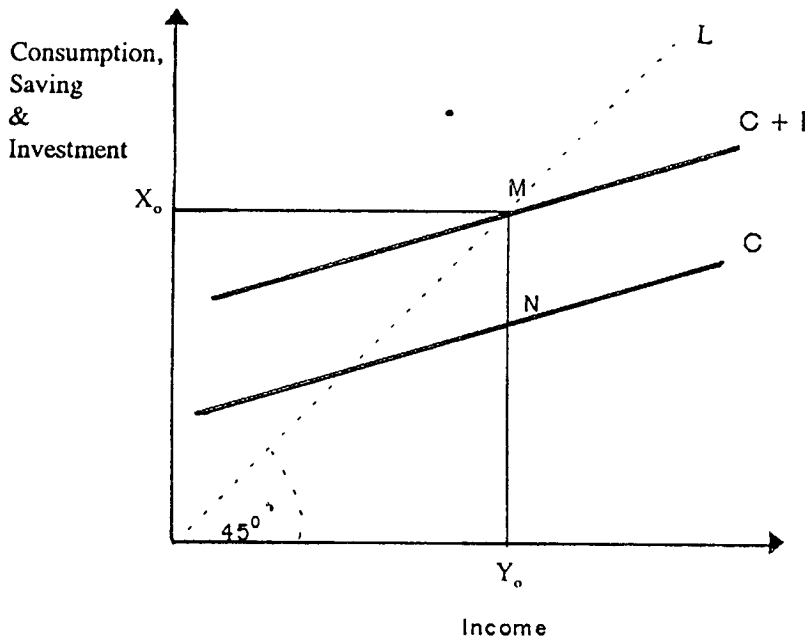
Discrepancy between saving and investment becomes a source of disturbance in an economy. Disturbance in an economy is manifested by an excess in aggregate demand over aggregate supply (or excess in aggregate supply over aggregate demand). Excess in aggregate demand over aggregate supply occurs when investment (injection) is greater than saving (leakage). Excess in aggregate supply over aggregate demand occurs when saving (leakage) is greater than investment (injection). Here how income equilibrium is reached can be explained in two ways: One with saving and investment (Figure 23-3) and the other with aggregate demand and aggregate supply (Figure 23-4).

In Figure 23-3, consumption curve (C) moves upward toward right,

indicating that consumption is a function of income. As income goes up, so does the consumption. C + I curve represents consumption and investment. It is parallel to C curve, implying that investment is autonomous, that is, it is

FIGURE 23-3

INCOME DETERMINATION IN AN ECONOMY WITHOUT A GOVERNMENT SECTOR
(With Saving and Investment)



Notes: C = Consumption
I = Investment

unrelated to income. (Investment can be autonomous and induced. Induced investment means that it is affected by income. For simplicity, it is here assumed as autonomous.) The line L is drawn at 45^0 which implies that at any point on this line income will be equal to consumption plus investment. Here equilibrium will be at Y_0. Here condition of equilibrium will be:

$$S = I \qquad \ldots (23\text{-}2)$$

In this figure, saving = investment = MN. MN is equal to investment

because it is the difference between income (C + I) and consumption (C). MN is also equal to saving. Saving is that portion of income which is not consumed. Since income is Y_0 (X_0 or C + I), the portion of income which is not consumed is MN. What will happen if the economy is not in equilibrium? The economy is not in equilibrium when investment is greater than saving (aggregate demand is greater than aggregate supply) or when saving is greater than investment (aggregate supply is greater than aggregate demand). In that case, automatic forces will come into play to restore the equilibrium. If aggregate demand is greater than aggregate supply, production will expand until it becomes equal to aggregate demand. In Figure 23-3, when the economy is operating below the equilibrium income level (Y_0), investment will be greater than saving (aggregate demand will be greater than aggregate supply). Income will rise until it reaches Y_0 where saving is equal to investment (aggregate demand is equal to aggregate supply). Income will rise because production will expand due to the excess of aggregate demand over aggregate supply. Similarly, income will fall if it is above the Y_0 level because here saving is greater than investment (aggregate supply is greater than aggregate demand). The excess of aggregate supply over aggregate demand will cause a cutback in production.

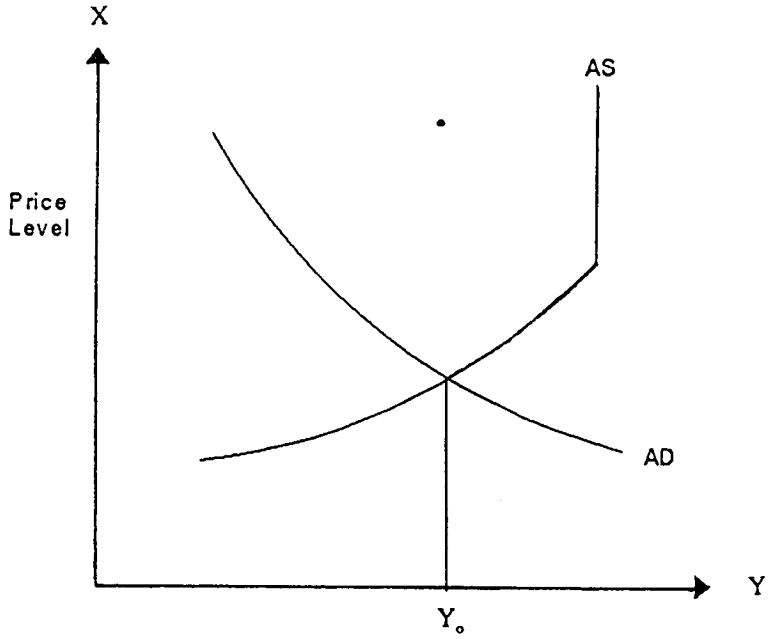
Figure 23-4 explains the determination of income through aggregate demand and aggregate supply curves. The AD (aggregate demand) curve moves downward toward right, indicating people demand more goods and services when prices go down. The AS (aggregate supply) curve, on other hand, moves upward toward right, and at a certain point it becomes vertical to X axis. The upward movement of the curve implies that businessmen are willing to supply more goods and services when prices go up, but this can happen up to a point. Ultimately, a stage is reached where all the resources are fully utilized (a state of full employment). At that point, an increase in prices will have no effect on production. (This is the point where AS is vertical to X axis.) The economy will be in equilibrium where aggregate demand is equal to aggregate supply, which is at Y_0 income level. At that point, investment will be equal to saving. If they are not equal, then aggregate demand will not be equal to aggregate supply either. If aggregate demand is greater than aggregate supply, it means that investment is greater than saving and net injection to the circular flow is greater than the leakage. On the other hand, if aggregate supply is greater than aggregate demand, it means that saving is greater than investment and leakage to the circular flow is greater than the net injection.

The source of disturbance in such an economy will result from a discrepancy between saving and investment. Since saving and investment are done by two different groups, they are not likely to be the same all the time. Over time, both

saving and investment change, though investment changes more often than the other. Saving changes because of change in the public's saving habits.

FIGURE 23-4

INCOME DETERMINATION IN AN ECONOMY WITHOUT A GOVERNMENT SECTOR
(With Aggregate Demand And Aggregate Supply)



Notes: AD = Aggregated demand
AS = Aggregate supply

Investment changes because of change in businessmen's expectations, technological breakthroughs and interest rates. So over time, both saving and investment change which become a source disturbances in an economy.

In such an economy, can we control the disturbances and restore the equilibrium? The answer is no. Only automatic forces described earlier can do it. But it may take a long time. The government sector has the power to do something about it. But it is excluded from the economic system described here.

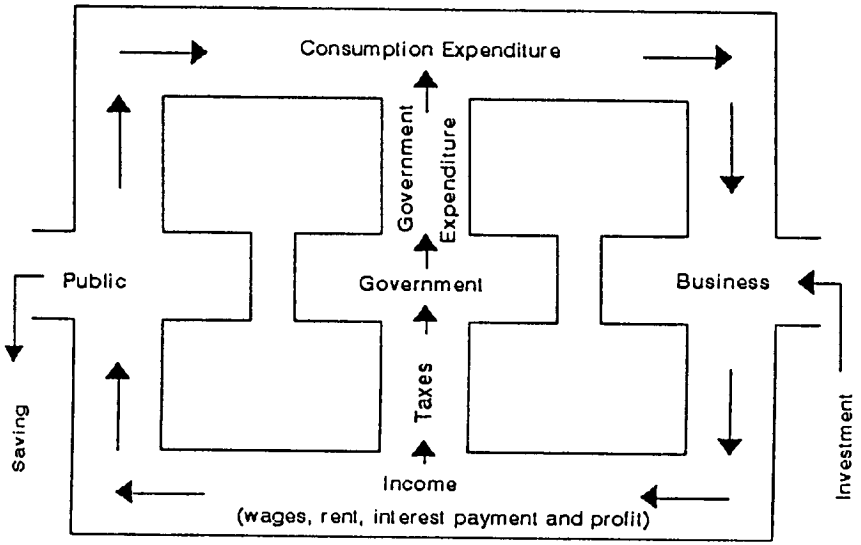
Also, even when the equilibrium is reached, it may not be sufficient. It may be much below the full employment level.

ECONOMY WITH A GOVERNMENT SECTOR

In the above two examples, the economy functions on its own. There is no one in the system who can regulate the economy. Changes in the economy resulting from changes in saving and investment occur on their own. In actual reality, we have another sector, government, which can regulate the economy. Government sector can cause leakages and injection into the circular flow. Government taxes work as a leakage, and government expenditure, as an injection. Figures 23-5 describes the working of circular flow of economic activities where government sector is included.

FIGURE 23-5

CIRCULAR FLOW OF ECONOMIC ACTIVITIES WITH A GOVERNMENT SECTOR



Since the government controls expenditure (injection) and taxes (leakages), it can manipulate them to control the circular flow and consequently income. If the government wishes to stimulate the economy, it will increase its expenditure and/or reduce taxes. If people make more money because of increase in government expenditure, they will have more money to spend. As a result, the

aggregate demand for goods and services will increase. When the aggregate demand increases, production and consequently income will increase. The same way, when the government reduces taxes, take home pay of people increase, which in turn increase their spending power. When spending power of people increases, aggregate demand and consequently income, output and employment will increase. The opposite will be the case if the government decides to dampen the economy in an attempt to control inflation by reducing government expenditure and/or by increasing taxes. Here the condition of equilibrium will be:

$$S + T = I + G \quad \ldots (23\text{-}3)$$

Here T stands for taxes, and G for government expenditure.

The effect of an increase in government expenditure or reduction in taxes on income can also be explained graphically. In Figure 23-6, the economy will be in equilibrium when $S_0 + T_0$ is equal to $I_0 + G_0$. In this figure, the economy is in equilibrium at income Y_0. Here $I_0 + G_0$ curve represents sumtotal of investment and government expenditure, and $S_0 + T_0$ curve represents the sumtotal of saving and taxes. If the government wishes to stimulate the economy, it can raise its expenditure and/or reduce its taxes. In this figure, rise in income from Y_0 to Y_2 results from a rise in government expenditure from $I_0 + G_0$ to $I_0 + G_1$, and rise in income from Y_0 to Y_1 results from a reduction in taxes from $S_0 + T_0$ to $S_0 + T_1$. Opposite will be the case if the government decides to dampen the economy in an attempt to control the inflation. To accomplish it, government will reduce its expenditure and/or raise its taxes.

The government, if it so desires, can also influence private investment with taxes. By providing a tax incentive to businessmen, it can encourage investment. By the same token it can discourage investment by raising certain taxes.

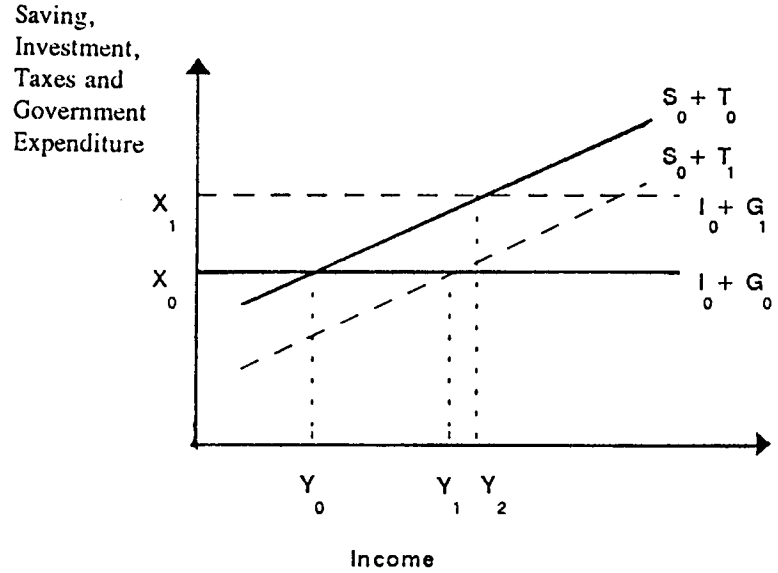
CIRCULAR FLOW OF ECONOMIC ACTIVITIES WITH GOVERNMENT AND FOREIGN TRADE SECTORS

We live in a society where we consume not only goods produced domestically but also those manufactured abroad. To a consumer, it does not make any difference whether he/she buys a good manufactured at home or abroad, but to the income (gross domestic product or GDP) it does. Other things remaining constant, our GDP falls if we consume more and more of goods manufactured abroad, and rises if people abroad consume more and more of our goods. In other words, exports increase income and imports decrease it. Exports

increase income because income (wages, rent, interest, profit and depreciation)

FIGURE 23-6

EFFECT OF AN INCREASE IN GOVERNMENT EXPENDITURES AND/OR DECREASE IN TAXES ON INCOME



earned from the production of these goods stay home. By the same token, imports reduce our income because income earned from the production of these goods is earned by people abroad. The economy with a government and foreign trade sectors is often called open economy because it is open to the outside world.

In order to understand how income equilibrium takes place in such an economy, we have to understand the difference between total output and total domestic expenditure. A nation's total output is measured as sumtotal of consumption expenditure, investment expenditure, government expenditure and exports (C + I + G + E). Total expenditure, on the other hand, is sumtotal of consumption expenditure, investment expenditure, government expenditure and imports (C + I + G + M). A nation may, at any given time, produce more than what it consumes. This would happen when its exports are greater the imports. (In other words, some of the goods produced are not consumed at home, but by people living abroad.) Similarly, a nation may, at any given time,

consume more than what it produces. This would happen when its imports are greater than exports. (This means a portion of our expenditure is made on goods manufactured abroad, not at home.)

How income equilibrium is reached in an open economy can be explained with the help of Figure 23-7. In this figure, line C + I + G + M (sumtotal of consumption expenditure, investment expenditure, government expenditure and imports) represents total domestic expenditure, and line C + I + G + E (sumtotal of consumption expenditure, investment expenditure, government expenditure and exports) represents total output. Here equilibrium is reached when:

$$C + I + G + E = C + I + G + M \quad \ldots 23\text{-}4$$

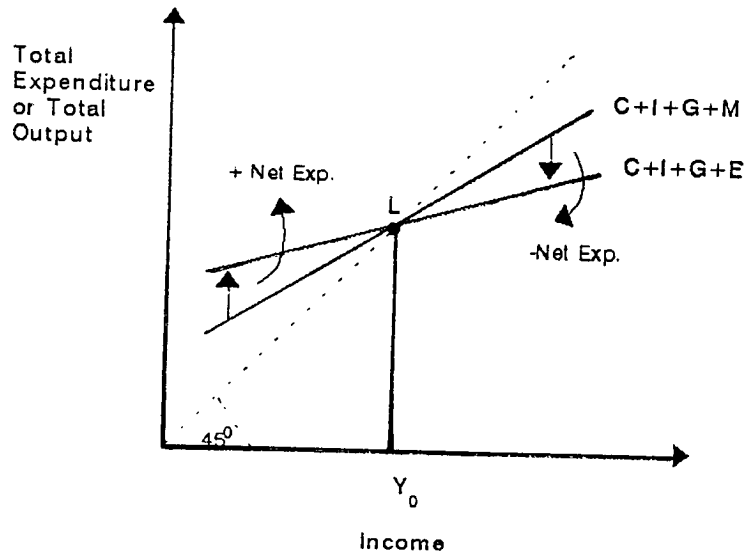
Also, line C + I + G + E intersects line C + I + G + M at 45^0 line. When C + I + G + E are equal to C + I + G + M , then E (exports) must be equal to M (imports), which means net exports are equal to zero. In the figure, these two lines intersect at point L, and equilibrium income is at Y_0. Any point to the left of L, exports will be greater than imports, and any point to the right of it, imports will be greater than exports. Other things remaining constant, when net exports are positive (exports greater than imports), the resulting effect on an economy will be expansionary. Because when exports rise, income, output and employment rise. By the same token, other things remaining constant, when net exports are negative (imports greater than exports), the resulting effect on the economy will be contractionary. We are buying more and more of goods manufactured abroad, thereby increasing income, output and employment of people abroad, not of people at home.

OFFSETTING EFFECTS OF A FISCAL POLICY

Although expansionary fiscal policy on the whole tends to stimulate the economy and contractionary policy tends to dampen it, they generate some forces which produce effects contrary to what was intended by the policymakers. For example, expansionary policy increases aggregate demand which in turn increases prices. An increase in the price level increases imports and decreases exports, which have a dampening effect on the economy. Also, expansionary fiscal policy creates a deficit in the budget. To finance the budget, government has to borrow money from the market. An increase in borrowing increases interest rates. An increase in interest rates encourages foreigners to invest here. To do so, foreigners purchase dollars in the foreign exchange market which increases its value. The increase in the value of a dollar increases imports and

decreases exports. This again tends to dampen the economy. Similarly, contractionary fiscal policy also produces some effects contrary to what was intended by policymakers. (See Figure 23-8)

FIGURE 23-7
INCOME DETERMINATION IN AN ECONOMY WITH GOVERNMENT AND FOREIGN TRADE SECTORS



KEYNESIANS, MONETARISTS AND RATIONALISTS

Fiscal policy has come a long way. From a position of no status in the classical philosophy that dominated economic thinking until 1935, countercyclical fiscal policy reached its pinnacle in the 1960s -- the heyday of Keynesian macroeconomics. Since then it has come under attack first from Monetarists and then from Rationalists.

Keynesian View

A large number of recessions during the 19th century and the first part of 20th century convinced John Maynard Keynes that the only way to come out of recession or shorten its duration was to stimulate aggregate demand. The easiest way to stimulate aggregate demand was by increasing government expenditure. The government could increase its expenditure by undertaking projects such as

building highways, bridges and parks. In addition, Keynes believed, the monetary policy won't work when there is a severe depression. During such time, businessmen are so pessimistic that even low interest rates won't encourage them to increase their investment.

FIGURE 23-8

OFFSETTING EFFECTS OF FISCAL POLICY IN AN OPEN ECONOMY

Expansionary Fiscal Policy		Contractionary Fiscal Policy	
Increases aggregate demand	Increases Treasury borrowing	Decreases aggregate demand	Decreases Treasury borrowing
↓	↓	↓	↓
Increases domestic price level	Increases interest rate	Decreases domestic price level	Decreases interest rate
↓	↓	↓	↓
Increases imports and decreases exports (Decreases net exports)	Increases foreign demand for dollars	Decreases imports and increases exports (Increases net exports)	Decreases foreign demand for dollars
	↓		↓
	Increases value of the dollar		Decreases value of the dollar
	↓		↓
	Increases imports and decreases exports (Decreases net exports)		Decreases imports and increases exports (Increases net exports)
Both the above elements partially offset the impact of an expansionary fiscal policy.		Both the above elements partially offset the impact of a contractionary fiscal policy.	

Those who believe in the basic premises of John Maynard Keynes are called Keynesians. According to Keynesians the effect of fiscal policy is strong and

immediate. Two major tools of fiscal policy are government spending and taxes. When government spends money, income of some people increases instantly. As a result, GDP increases. A change in taxes also affects the economy quickly, though not as quickly as expenditure. When taxes are reduced in an effort to stimulate the economy, disposable income (spending income) of people increases. This in turn increases consumption expenditure and consequently GDP. Because of the multiplier, their effect (the effect of a change in government expenditure or taxes) will be greater than the size of the action taken. (How the multiplier works, read Chapter 24.) Keynesians recognize that there is a crowding out effect (a portion of private investment is cutback because of the fiscal stimulative action), but it is generally minor in nature. The stimulative fiscal action (increase in government expenditure or reduction in taxes) creates a deficit in the budget. To finance the budget, the government borrows money from the market. The government borrowing puts a pressure on the financial market, thereby causing market interest rates to rise. The rise in interest rates causes some cutbacks in domestic investment, which is called crowding out effect.

Monetarist View

Monetarists believe that fiscal policy is weak and ineffective because: (1) The velocity of money is constant. (2) Fiscal policy is highly inflexible. How the constant velocity of money makes fiscal policy ineffective can be explained with the help of equation of exchange. (The velocity of money is reciprocal of demand for money. When the demand for money increases, the velocity of money declines. Therefore, when we say that the velocity of money is constant, it means that the demand for money is constant. Constant demand for money means that the demand for money is insensitive to interest rates.)

$$MV = PQ \quad \ldots (23\text{-}5)$$

Where:

M = Money supply
V = Velocity of money
P = Price
Q = Quantity of goods and services produced

The above equation is merely an accounting identity which says nominal GDP (PQ) must be equal to money supply times velocity (MV). In this equation, monetary policy works through M and fiscal policy through V. PQ

(GDP) can increase either because of increase in M or because of increase in V. If V is constant, which is assumed by Monetarists, then it means that fiscal policy has no effect on GDP. The change in GDP will come only from a change in the money supply (M).

To understand this, it is important to know how fiscal policy works through V. Suppose the authority wants to stimulate the economy through a fiscal action. To do so, it will either increase government expenditure or reduce taxes. In either case, it will cause a deficit in the budget. To finance the deficit, let us say, it borrows money from the domestic market. If the money supply remains constant (a case of pure fiscal policy), then government borrowing from the market will raise interest rates. With a rise in interest rates, the demand for money will decline because the cost of holding money has gone up. If the demand for money declines, the velocity of money will rise because velocity is reciprocal of demand for money. In other words, if people hold less money, the turnover of money will go up. But, if the demand for money is insensitive to interest rates (which the Monetarists say it is), then the rise in interest rates resulting from an increase in government borrowing will not cause the demand for money to fall and velocity of money to rise. If the velocity of money does not rise, expansionary fiscal action will not have any effect on the economy. Keynesians disagree. They say that the velocity of money is not constant. All the empirical studies support it.

Two, fiscal policy is weak and ineffective because it is highly inflexible. Once the action is taken it cannot be easily reversed. But, at times, we will make wrong decisions because of our inability to forecast accurately. Because of the inflexibility, we won't be able to correct it. Monetarists, however, recognize that fiscal policy has a re-allocative effect on long run output. If an expenditure on a program re-allocates resources from consumption to investment (let us say it cuts down low income subsidies and increases expenditure on education), long run output will rise.

Rationalist View

Rationalists, a group of economists who recently branched out of Monetarists, claim that the fiscal policy does not work at all. They support their position on the grounds: (1) People are rational and they form their expectations using all the information available at the time. (2) People can anticipate government action. (3) They can manage to take a necessary action to protect their interest. An expansionary fiscal action normally increases aggregate demand and consequently prices. An expansionary fiscal action will stimulate the economy only if increase in prices are not accompanied by an increase in wages. That is, wages lag behind. If prices rise and wages don't, profit will rise. A rise in profit will give a rise to investment. When investment rises, income, output and employment will rise. But if people act rationally and can not only predict government policy but also manage to raise their wages in response to an expected increase in prices, then income will not rise. In other words, if wages rise at the same time as prices, profit will not rise. If profit does not rise, investment will not rise. If investment does not rise, income, output and employment will not rise either. Therefore, Rationalists say that fiscal policy will be effective only if it comes as a surprise. That is, people fail to anticipate the increase in prices resulting from an expansionary fiscal action. If they fail to anticipate an increase in prices, they will fail to raise their wages. But Rationalists say that people cannot be fooled all the time. Once hurt, they will be more careful to protect their interest in the future, that is, they will make sure that their wages rise whenever prices rise. If that happens, expansionary fiscal policy will cease to work.

Keynesians disagree. They say that average person is not as well informed as Rationalists believe. Furthermore, people don't have as good power of predicting what course of action government would take as Rationalists believe.

Rationalists further add if expansionary fiscal policy is pursued, it will create a deficit in the budget. To pay for it, government will sooner or later raise taxes. Recognizing higher taxes in the future, people will increase their current saving equivalent to the current gain resulting from deficit spending. If increase in saving matches with deficit spending, which Rationalists assume it does, there will be no effect on the economy. Because whatever the money the federal government puts in the hand of public in way of expansionary fiscal policy will be saved and not spent. As a result, aggregate demand and aggregate output will not rise.

SUMMARY

Unlike monetary policy, fiscal policy works through government expenditure and taxes. If expansionary policy is pursued, the government will increase expenditure and reduce taxes. The opposite will be the case if the contractionary policy is pursued.

How income equilibrium occurs in an economy depends on the economic system. If there is no government and foreign trade sectors, and people neither save nor investment, then equilibrium will be where income is equal to

consumption expenditure. If people do save and invest, then the equilibrium will be where saving is equal to investment. If we add the government sector to it, then the condition of equilibrium will be where consumption plus investment are equal to saving plus taxes. (Or, where aggregate demand is equal to aggregate supply.) If we add also the foreign sector, then the conditions of equilibrium will be where total output (consumption expenditure + investment expenditure + government expenditure + exports) is equal to total domestic expenditure (consumption expenditure + investment expenditure + government expenditure + imports). Total output line and total domestic expenditure line will intersect at 45^0 line. Here net exports will be equal to zero.

Saving and investment can become a source of disturbance in an economy. Since they are done by two different groups of people, they may not be equal. The introduction of government sector can contribute to disturbance as well as stability in an economic system. This will contribute to instability if tax revenues (leakage) and government expenditure (injection) are not equal, which is mostly the case. However, the government can, by adjusting taxes, expenditure or both, restore economic stability.

Keynesians and Monetarists are not in agreement as to the effectiveness of fiscal policy. Monetarists say that it is weak and ineffective because the velocity of money is constant. But Keynesians say that the velocity of money is not constant. Rationalists, who recently branched out of the Monetarist group, believe that fiscal policy does not work at all.

QUESTIONS FOR REVIEW

1. Explain the conditions of equilibrium where:

   i. Where there is no government and foreign trade sectors
   ii. Where there is only government sector
   iii. Where there is government and foreign trade sectors

2. Explain how Monetarists explain that fiscal policy is ineffective.

3. What do we mean by velocity of money? How does the idea of constant velocity of money affect the effectiveness of fiscal policy?

4. Describe how different forces tend to dampen the impact of expansionary and contractionary actions.

5. Describe how Rationalists view fiscal policy.

6. Explain in brief the followings:

   i. Distinguish between total output and total expenditure
   ii. Constant velocity of money
   iii. Rational expectations
   iv. Full employment

7. Explain how saving and investment become a source of disturbance in an economy.

8. Explain graphically how an increase in government expenditure and decrease in taxes affect income.

9. Explain in detail in what ways the introduction of government sector into the economy adds to stability and in what ways it adds to instability.

10. Explain the role of foreign trade sector in the economy. How can the government use this sector to stabilize the economy?

SUGGESTIVE FURTHER READING

Andersen, Leonall C. and Jerry L. Jordan. "Monetary and Fiscal Actions: A Test of Their Relative Importance in Economic Stabilization." **Review: The Federal Reserve Bank of St. Louis.** October 1986, pp. 29-44.

Batten, Dallas S. and Daniel L. Thornton. "The Monetary-Fiscal Policy Debate." **Review: Federal Reserve Bank of St. Louis.** October 1986, pp. 9-17.

Blinder Alan S. **Fiscal Policy In Theory and Practice.** Morristown, N.J.: General Learning Press, 1973.

Dotsey, Michael and Robert G. King. "Rational Expectations Business Cycle Models: A Survey." **Economic Review: Federal Reserve Bank of Richmond.** March/April 1988, pp. 3-15.

Penner, Rudolph G. "The Economics and the Morality of the Budget Deficit." **Business Economics.** October 1988, pp. 6-12.

Samuelson, Paul A. and William D. Nordhaus. **Economics.** New York: McGraw-Hill, Inc., 1992.

Tanner, J. Ernest. "Fiscal Policy: An Ineffective Stabilizer?" **Economic Review: Federal Reserve Bank of Atlanta.** August 1982, pp. 45-51.